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Gesture Recognition and Sign Language Detection using Deep Learning

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Abstract: *Gesture recognition and sign language detection are essential for improving human-computer interaction and accessibility. The proposed system employs deep learning techniques using TensorFlow and Keras, combined with computer vision capabilities of OpenCV, to enhance the accuracy of gesture and sign language interpretation. Convolutional Neural Networks (CNNs) are utilised to extract spatial and spatiotemporal features from video frames, ensuring robust gesture recognition. For sign language detection, CNNs recognize static hand gestures, while sequential models built with Keras facilitate the translation of continuous sign language. This integration showcases the potential of TensorFlow, Keras, and OpenCV in creating more inclusive and intuitive digital experiences.*

Keywords: Machine learning, Deep learning, Neural Network, Convolutional Neural Network,Open CV